



State of Utah

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M/035/0009
Incoming.
No task

MAR 23 2015

Steve Schnoor
Manager - Environment
Rio Tinto Kennecott
4700 Daybreak Parkway
South Jordan, Utah 84095

RE: Comments on Rio Tinto Kennecott Copper's (RTKC) Report Entitled *Clay Hollow Post-Removal Report* dated January 2015

Dear Mr. Schnoor:

The following comments are submitted by the Divisions of Water Quality (DWQ) and Environmental Response and Remediation (DERR), in consultation with EPA Region 8 (EPA), in response to our review of the referenced RTKC report (submitted on behalf of Rio Tinto Barneys Canyon Mining Company, RTBC).

Please note, the Agencies (DWQ and DERR) are still awaiting receipt of the revised Dec. 12, 2014 sediment source delineation report RTKC requested to keep separate from the Clay Hollow Post-Removal Report. The Agencies reviewed the first draft and provided comments (via email) on the source delineation report back on December 16, 2014. Overall, the determination that RTKC response actions are complete at Clay Hollow cannot be made until such time both reports (source delineation and Clay Hollow Post-Removal Report) are deemed complete and acceptable by the Agencies.

Specific Comments

1. As part of the verbal agreement on December 11, 2014 to RTKC's request to report separately on the delineation of the source of sediment impacts to the Quail and Clay Hollow drainages, RTKC was requested to report on source control measures at Barneys Canyon Mine in the post removal action report. These source control measures (engineering and administrative) are intended to be used to prevent the ongoing introduction of sediment into both noted drainages. The source control measures are to be implemented until such time that the Barneys Canyon Mine Heap Leach Pads are completely encapsulated and reclaimed, pursuant to the requirements of the permits issued and approval by the DWQ and the Division of Oil, Gas and Mining (DOGM). Please revise the report to include a section on the source control measures and their implementation status.
2. Section 3.1.1, 8th bullet, page 3-2: It states that a small "stilling" basin 100 feet by 50 feet by 5 feet deep was constructed up-gradient of the stone check dam and silt fence placed (west side) in front of the culvert underlying the CRL grade. During development of the work plan for this area, said basin was not included as part of the proposed storm water controls. Please revise the report to

- explain if this basin is still in place or has been removed. Further investigatory work may be required by the agencies.
3. Section 3.2.2, second paragraph, page 3-4: It is noted that a rain event on July 29, 2014 caused the re-mobilization of sediments located up-gradient of the removal action. Further noted, additional removal was performed because of the re-mobilized sediments. Please revise the paragraph to list the specific verification samples collected to assess attainment of the site action levels. Please explain if the same sample nomenclature was used and how the second round of samples were distinguished from the first round.
 4. Section 4.2, 4.3, 4.4, page 4-1 to 4-2: Please revise by listing the average lateral distance between composite sample aliquots.
 5. Figures 4-12 and 4-14: The agencies note that relatively moderate sized areas have not been characterized north of Heap Leach Pad 5, along the southern embankment of Quail Hollow. For example, Figure 4-12 the area between samples UCHS-016 and UCHS-149, and Figure 4-14 the area between the access road forming the northern boundary of Heap Leach Pad 5 and samples UCHS-008 and UCHS-057. Please report on how these two areas were determined to not require removal action.
 6. Section 6.1, page 6-1: It states that 95 post removal samples were collected to document attainment of the action levels. However, review of the data in Table 6-1 found that 78 post removal samples were collected. Please verify and if necessary revise the referenced sample total.
 7. Section 6.3, page 6-1: Please report the total number of confirmation samples collected.
 8. Section 6.3, page 6-1: Please revise the report to explain in more detail how RTKC rendered the decision that the sediment/soil comprising confirmation sample #CHWJS-83 was not indicative of sediments being removed from the drainage. As the B&G rail grade (in part) was the haul route for the project and confirmation sample #CHWJS-83 was collected along the top of the rail grade just outside of RTBC's property line, there is potential that this sample represents sediment/soil which sloughed from a haul truck(s). If RTKC can provide evidence that delineates the sediment/soil on the rail grade as being associated with the rail grade rather than originating from the haul trucks, the confirmation sample result will be added to the data set being used to characterize the rail grade under CERCLA's auspices.
 9. Section 7.1, Laboratory QA/QC, 1st paragraph, page 7-2: The first paragraph was determined (by its wording) to introduce the intra-laboratory precision and accuracy assessments (and methodology of such) for KEL but left out AWAL. Please revise the introductory paragraph to introduce the three quality assurance assessments and methodology for such (i.e. intra-lab precision, accuracy, and representativeness) performed by both labs.
 10. Section 7.1, Laboratory QA/QC, pages 7-2 to 7-3: For the principal contaminants of concern (arsenic and thallium), please report how many assessments of intra-lab precision, by evaluating the relative percent difference, RPD, between lab duplicate samples (i.e. lab prepared duplicates for KEL and MS/MSD samples for AWAL), were completed and attained the data quality objective (DQO) established by each lab. It is noted from Section 7.1, page 7-3 that over 263 RPD assessments were performed by KEL to assess intra-lab precision covering a broader group of analytes than the two contaminants of concern (COCs). Furthermore, there is no narrative provided on AWAL's assessment of intra-lab precision. Please revise the report to distinguish how

assessments since the original draft just covered KEL's results. Please explain the significance of non-attainment as applicable.

11. Section 7.1, Laboratory QA/QC, pages 7-2 to 7-4: Please provide an assessment of representativeness for the analytical data provided by both labs. As noted from the quality assurance project plan (QAPP), precision (inter and intra lab), accuracy and representativeness were required to be assessed. As part of the representativeness discussion please explain the total number of batches which were analyzed by KEL and AWAL, and if all batches only contained the samples collected from impacted drainages. As part of the representativeness assessment, please explain if quality control samples were derived from samples submitted from the removal project and the frequency of such.
12. Appendix B, KEL LQARs and analytical certificates, Samples CHWJS-72 – 76: Half of the chain of custody form is missing. Please revise.
13. Appendix B, KEL LQARs and analytical certificates, Samples CHWJS-136 to -139: Half of the chain of custody form is missing. In light of Comments #12 and #13, please verify that all forms, narratives, certificates, etc. are complete in the overall report.

Please contact Brian Hamos (801-536-4384) or Douglas Bacon (801-536-4282) if you have any questions regarding this letter.

Sincerely,



Dan Hall, P.G., Manager
Ground Water Protection Section

DH:BH:DB:nf

cc: Douglas Bacon, DERR (via email)
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